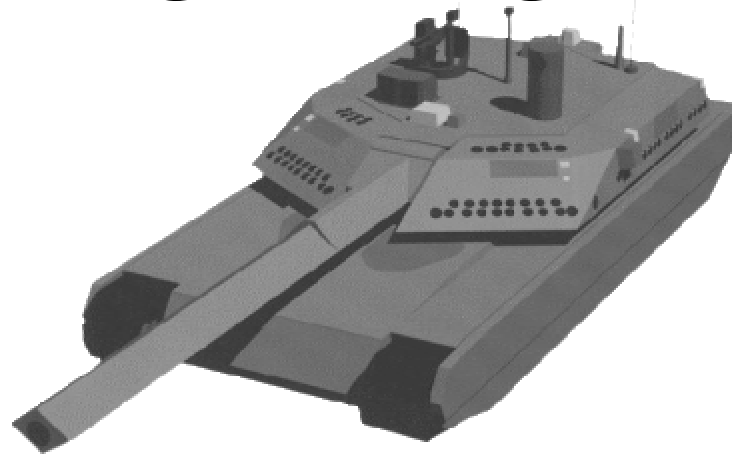




TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army

Tank-Automotive Research, Development, and Engineering Center



Technologies for the Objective Force

Mr. Dennis Wend

Executive Director for the National Automotive Center



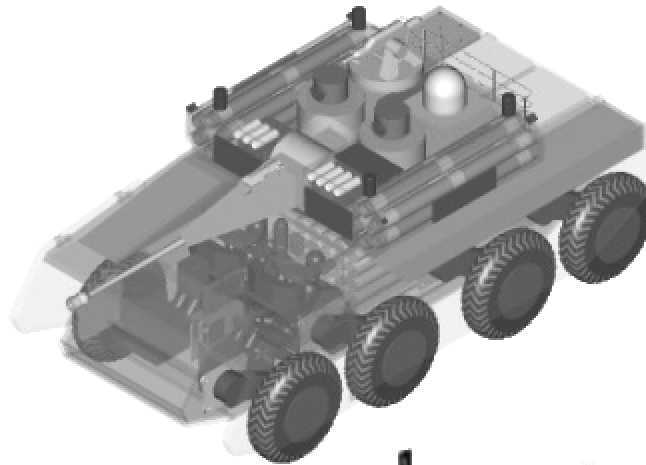
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Report Classification unclassified	Classification of this page unclassified	
Classification of Abstract unclassified	Limitation of Abstract UU	
Number of Pages 12		

TARDEC's Vision

Superior Technology for a Superior Army



Committed to Excellence

TARDEC's Six Principal Product Lines



Combat and Tactical Vehicles



Military Bridging



Logistics Equipment



Fuels and Lubricants



Countermine Equipment



Water Purification Equipment

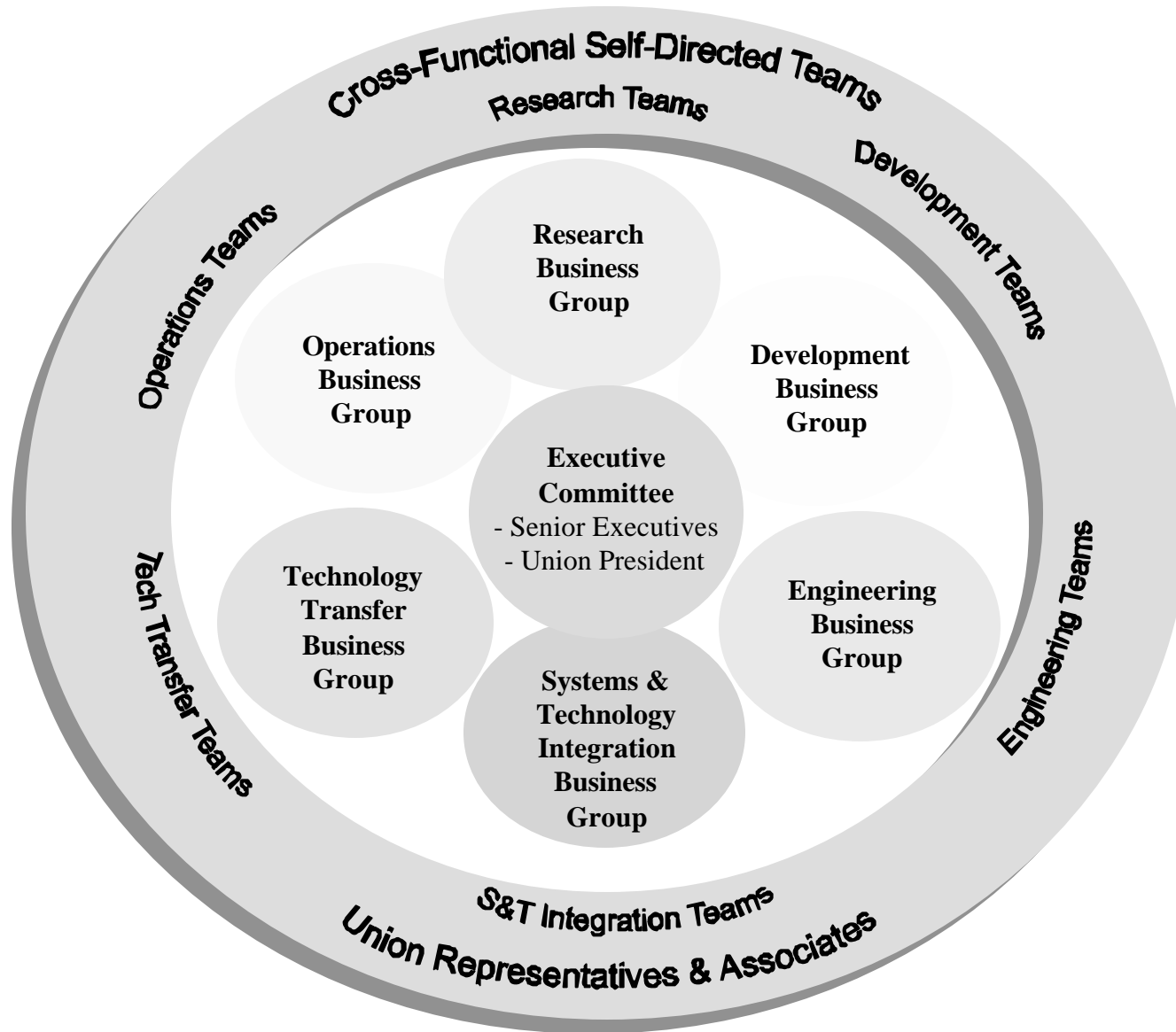
Committed to Excellence

TARDEC's Principal Laboratories

-
- ***Simulation Lab***
 - ***Concepts Lab***
 - ***Perception Lab***
 - ***Fuels & Lubricants Lab***
 - ***Water Purification Lab***
 - ***Propulsion Lab***
 - ***Vetronics Integration Simulation Lab***
 - ***Laser Lab***
 - ***Composite Application Lab***
 - ***Robotics Lab***
 - ***Virtual Prototyping Lab***
 - ***Track & Suspension Lab***
 - ***Rapid Prototyping Lab***
 - ***High Performance Computing***
 - ***Terrain Sensing Lab***
 - ***50+ Special Facilities***

Investing in Intelligent Systems

TARDEC's Organization



Committed to Excellence

Research Business Group

- *Vehicle Electronics*
- Survivability Optimization
- Armor
- *Active Protection*
- *Signature Management*
- *Robotics*
- *Propulsion*
- *Track & Suspension*
- *Crew Station Design*
- Life Cycle Software Management
- *Vehicle Power Management*
- Laser Eye Protection



Soldier operating a crew station simulator.

National Automotive Center



Dual Use/Dual Needs Focus

**Dual Use Science & Technology
(DUS&T) Program**

**Advanced Automotive
Developments**

Military

Industry/Academia



FAR Contract

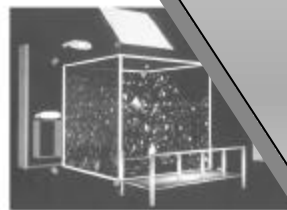
**Cooperative Agreement
(CA)**

Other Transaction (OT)

**Cooperative Research and
Development Agreement
(CRADA)**

**Small Business Innovation
Research (SBIR)**

**Automotive Research
Center (ARC)**



**Leverage Shared Technology/
Technology Transfer**

**Advanced Collaborative
Environments**

**High Performance
Computing**

Analytical Simulation

Physical Simulation

**Virtual Prototyping
Tools**

Committed to Excellence

TARDEC Robotics

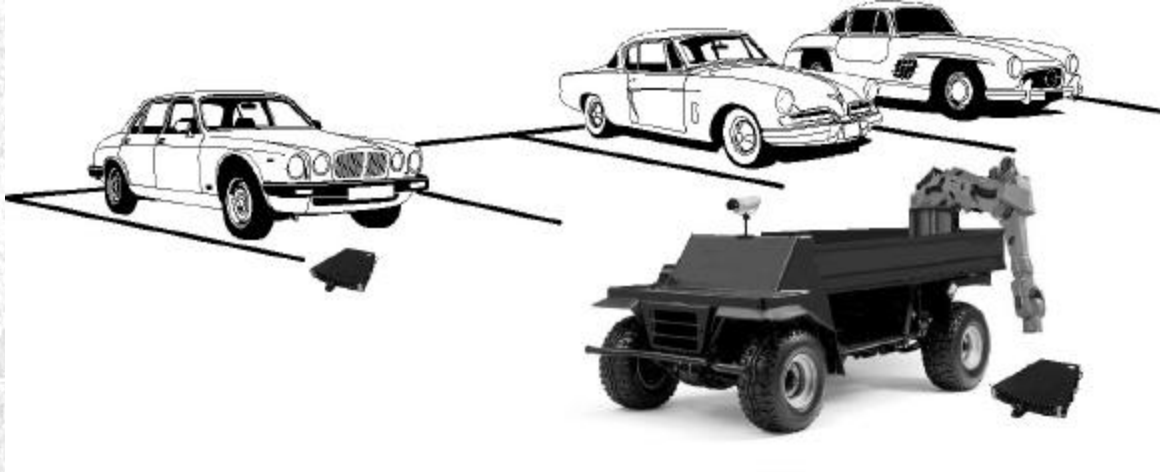
TARDEC Robotics
Laboratory

Crew Automation and
Robotics Team

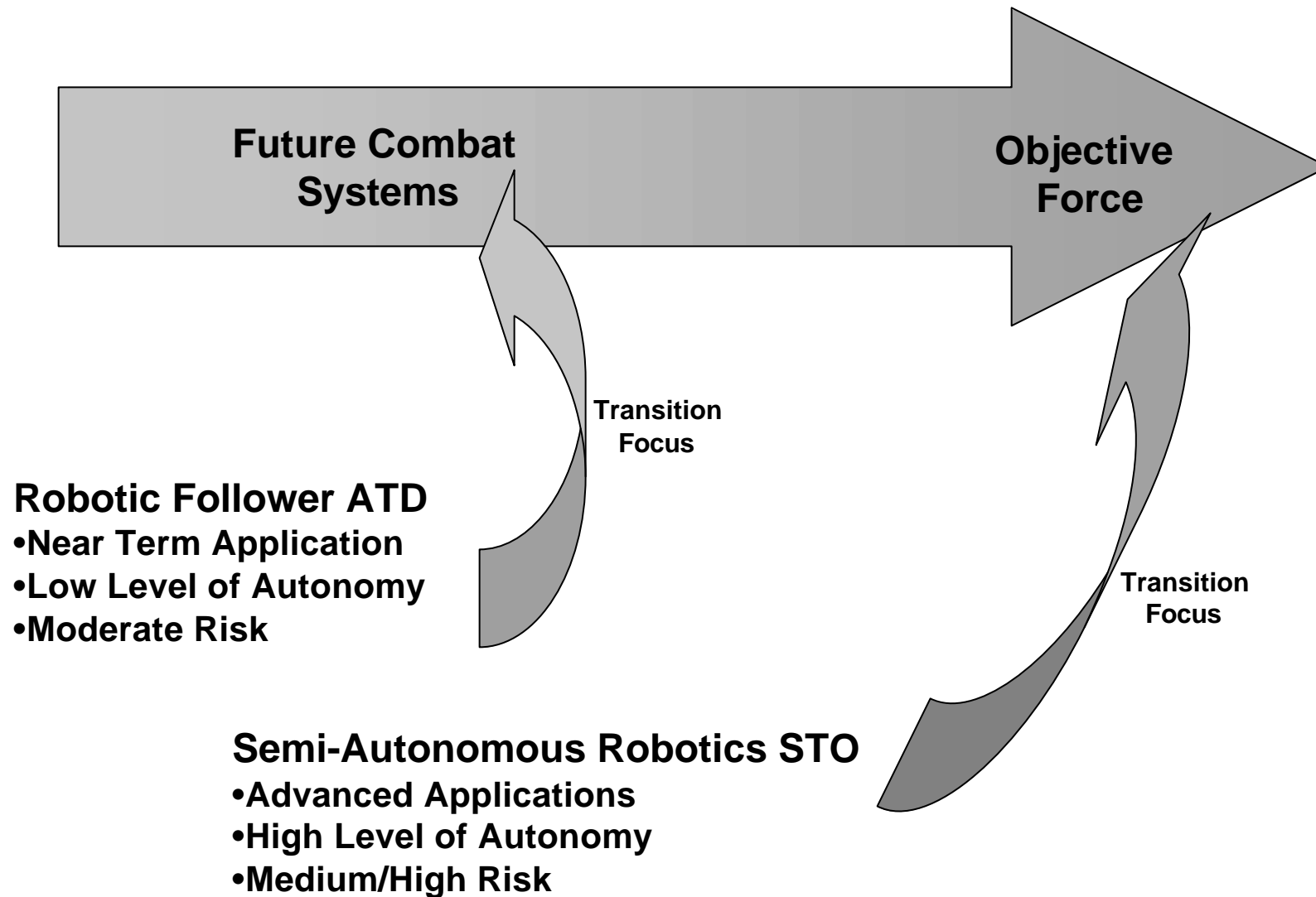
6.1

6.2

6.3



Army Robotics Transition Strategy



AUTOMOTIVE RESEARCH CENTER

A Partnership of Eight Research

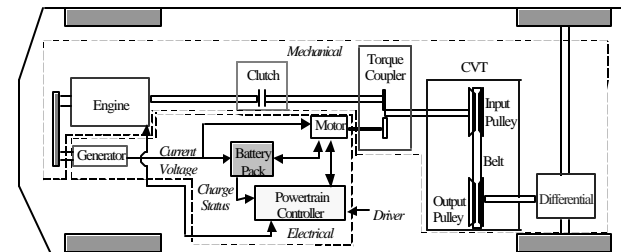
Universities

1st Thrust Area: Intelligent Vehicles and Robotics

- Enhance mission efficiencies
- Enhance fleet logistics
- Enhance driver/soldier efficiencies
- Reduce fuel consumption
- Increase mission safety margins
- Reduce overall emissions
- Reduce mission crew size

- Dynamic Route Guidance
- Driver Condition Systems
- Vehicle Dynamics/Stability

Design of Control System for Continuously Variable Transmission (CVT) System



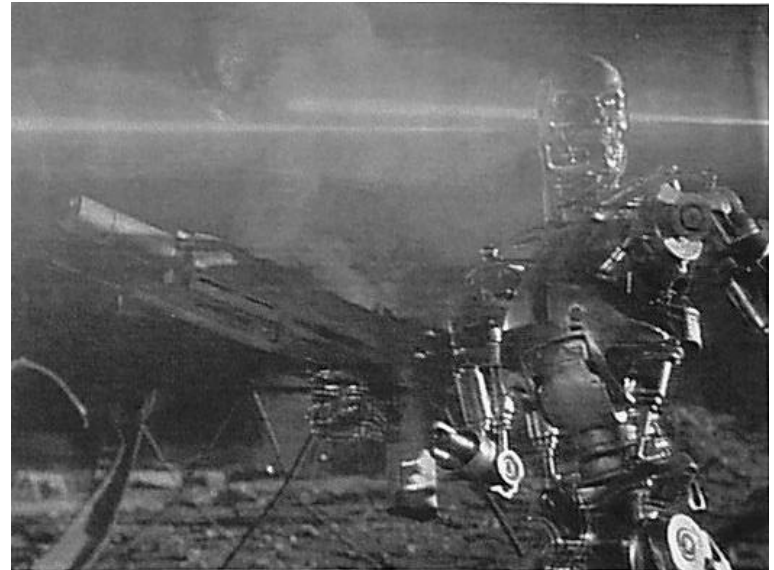
Parallel Hybrid Vehicle Featuring a CVT

- Fleet Management
- Vehicle Diagnostics
- Vehicle Optimal Design

Conclusions: Investing in Intelligent Systems

TARDEC Intelligent Systems Groups:

- 21st Century Truck – Vehicle Intelligence Team
- TARDEC Robotics Lab
- Crew Automation and Robotics Team
- Vehicle Electronics (Vetronics)
- Telematics for Prognostics and Diagnostics
- Perception Lab
- Automotive Research Center



Pushing the envelope
with intelligent systems

SmartTruck Current Capabilities

Bullet
Proof
Glass

On-Board
Diagnostics

Video
Surveillance

Wireless
Communication

Non-Lethal
Weaponry

Night
Vision

B.F. Goodrich
Run Flat Tires

Touch
Screen
Display

Bomb
Detection

Global
Positioning
System

